We Claim:

1. A system for wireless transmission of data, including position data, the system comprising:

(i) a hand held digital computer;

(ii) a position-locating device providing position information to the digital computer;

(iii) a VHF and/or UHF radio frequency transmitter; and

(iv) a radio modem having an input for digital data from the hand held digital computer, a modulator for converting digital data from the computer into a modulated analogue RF signal, and an output connected to the transmitter for transmission of said modulated signal.

2. A system according to claim 1, wherein said digital computer comprises means for controlling operation of said radio modem.

3. A system according to claim 2, wherein said control means comprises software installed on said digital computer.

4. A system according to claim 1, comprising radio receiver connected to the radio modem, the modem including a demodulator for demodulating a received RF signal and converting it to digital data for input to the digital computer.

5. A system according to claim 4, wherein a radio transceiver serves as both the radio receiver and transmitter.

6. A system according to claim 4, wherein said digital computer is of a type having a 'sleep mode', said radio modem including wake-up means for waking the computer from said 'sleep mode' on receipt of an RF signal by said radio receiver.

7. A system according to claim 6, wherein said wake-up means transmits a wake-up signal to the digital computer prior to transmission of a demodulated signal to the computer.

8. A system according to claim 1, wherein the hand held digital computer is a 'palmtop' or other 'Personal Digital Assistant'

9. A system according to claim 8, wherein said 'palmtop' or 'Personal Digital Assistant' operates the PalmOS platform and wherein transmission of data is initiated by activating a 'Request to Send' feature installed on the PalmOS platform, which causes a Push-to-Talk signal to be sent to the radio transmitter.

10. A system according to claim 8, wherein digital computer is a 'palmtop' or 'Personal Digital Assistant' which operates the PalmOS platform and wherein the wake-up signal is sent using the Palm Hot-sync feature.

11. A system according to claim 1, wherein the position-locating device is a GPS device.

12. A system according to claim 1, wherein the position location device is connected to the digital computer through the radio modem.

13. A system according to claim 1, wherein said digital computer has an 'always on mode' and a 'sleep mode', the computer being controllable to operate in a selected one of these modes.

14. A system according to claim 1, wherein the digital computer is powered by a rechargeable battery and the radio modem comprises charging means for charging said battery simultaneously with data exchange between the computer and the modem.

15. A system according to claim 1, further comprising a second digital computer which can be interfaced to the hand

held digital computer through the radio modem to receive data from and transmit data to the hand held computer.

16. A system according to claim 15, wherein said second digital computer is a Laptop PC or a Desktop PC or a Network Workstation.

17. A system according to claim 15, wherein said second digital computer is connected to a computer or telecommunications network.

18. A modem to provide an interface between a hand held digital computer, a radio frequency transmitter and/or receiver and a position locating device, the modem comprising:

(i) an input/output port for connection to a communication port of the hand held digital computer;

(ii) a modulator and/or demodulator for converting digital data to a modulated radio frequency signal and/or for converting a modulated radio frequency signal to digital data;

(iii) an input for data from the position-locating device;

(iv) a switch for selectively connecting (a) the modulator and/or demodulator to said input/output port, or (b) the position locating device input to said input/output port; and

(v) a controller for controlling the operation of the switch.

19. A modem according to claim 18, wherein said position locating device is an internal component of the modem.

20. A modem according to claim 18, wherein said digital computer is of a type having a 'sleep mode', said radio modem comprising wake-up means for waking the computer from said 'sleep mode' on receipt of an RF signal by said radio receiver.

21. A modem according to claim 20, wherein said wake-up means transmits a wake-up signal to the digital computer prior to transmission of a demodulated signal to the computer.

22. A modem according to claim 21, wherein said hand held digital computer is a 'palmtop' or other 'Personal Digital Assistant' operating the PalmOS platform and wherein the wake-up signal is sent using the Palm Hot-sync feature.

23. A modem according to claim 21, wherein said demodulator has a 'carrier detect' feature responsive to an RF carrier signal received by the radio receiver and the wake-up signal is initiated by said 'carrier detect' feature when an RF carrier signal is received.

24. A modem according to claim 21, wherein said controller has a 'packet recognition' feature responsive to demodulated data arriving at the switch from the demodulator and the wake-up signal is initiated by said 'packet recognition' feature on arrival of demodulated data.

25. A modem according to claims 18, comprising a second input/output port for connection to a second digital computer, said switch being operable by the controller to connect said second input/output port to said port for the hand held digital computer.

26. A method for the wireless transmission of a message from a sending station to a receiving station, the method comprising:

(i) at the sending station, dividing the message into a number of discrete data packets;

(ii) sending a data packet by radio transmission from the sending station to the receiving station;

(iii)waiting for acknowledgement from the receiving station that the packet has been received;

(iv) once receipt of the packet has been acknowledged, sending a subsequent packet to the receiving station; and

(v) repeating steps (iii) and (iv) until all of the data packets have been sent.

27. A method according to claim 26, wherein each data packet includes, in addition to the message data, a header, comprising data giving information about one or more of: an address of the receiving station; an address of the sending station; the length of the message data; and the number of data packets into which the message has been divided.

28. A method according to claim 26, wherein said header includes information defining a message type.

29. A method according to claim 26, wherein each packet includes check data, which can be used to test the integrity of the packet when it is received at the receiving station.

30. A method according to claim 26 wherein said message is encrypted prior to its division into discrete packages.

31. A method according to claims 27, wherein the size of the message data part of each packet is set by the sending station, the length of this segment of the packet being given in the packet header.

32. A method according to claim 26, wherein if an acknowledgement of safe receipt of any packet is not returned by the receiving station, the sending station re-transmits the packet automatically.

33. A method for receiving at a receiving station a message transmitted as a series of radio data packets from a sending station, each packet comprising a message data segment and a header, the header containing information including the address of the intended recipient of the message and the length of the message data segment, the method comprising:

(i) detecting receipt at the receiving station by a radio receiver of the first packet of a new message;

(ii) determining from the packet header whether the receiving station is the intended recipient of the message, and if it is;

(iii) determining from the packet header the length of the message data segment of the packet;

(iv) extracting and storing the message data from the packet; and

(v) transmitting an acknowledgement of receipt of the package to the sending station.

34. A method according to claim 33, wherein the packet header also includes an indication of how many subsequent packets of the complete message there are yet to be received.

35. A method according to claim 33, wherein each packet includes check data which can be used by the receiving station to test the integrity of the packet, comprising the further steps of checking the integrity of the received package and if the data packet is not correctly received, transmitting a 'not acknowledged' message to the sending station.

36. A method for the wireless broadcast of a message from a sending station, the method comprising:

(i) at the sending station, dividing the message into a number of discrete data packets;

(ii) labelling each packet as a broadcast packet;

(iii) transmitting a first data packet by radio transmission from the sending station;

(iv) transmitting at least one copy of the first data packet after a predetermined delay following transmission of the first data packet; and

(v) transmitting subsequent data packets, the transmission of each subsequent data packet being followed by the transmission of a copy of the packet prior to transmission of the next subsequent data packet.

37. A wireless communication system according to claim 1, wherein said radio modem is a modem according to claim 18.

38. A wireless communication system according to claim 1, comprising control means to enable the system to operate in accordance with the method of claim 26.

39. A system according to claim 38, wherein said control means comprises software installed on the hand held digital computer.

40. A system according to claim 38, wherein said control means is operable to automatically transmit, at predetermined intervals of time, a position report containing information about the location of the system, obtained from the position device.

41. A system according to claims 38, wherein said control means is operable cause the system to request the position of another station.

42. A system according to claim 38, wherein said control means is operable cause the system to act as a repeater station.

43. A system according to claim 42, wherein said control means controls the system to monitor communications between a sending station and a receiving station and to act as a repeater station when there is a communication failure between the stations.